

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

**FILED UNDER SEAL**

UNITED STATES OF AMERICA	)	
	)	
v.	)	CRIMINAL NO. 13-10200-GAO
	)	
DZHOKHAR TSARNAEV	)	

**MOTION TO EXCLUDE TESTIMONY REGARDING MATCHING  
TRANSMITTER-RECEIVER BINDING CODES**

Defendant, Dzhokhar Tsarnaev, by and through counsel, respectfully moves, pursuant to Federal Rules of Evidence 104(a), 401, 402, 403, 702, 703, and the Fifth and Sixth Amendments to the United States Constitution, to exclude the government's proposed expert testimony at trial regarding the matching of bind codes from a transmitter recovered from the Laurel/Dexter scene to a receiver recovered from the site of the first Boston Marathon blast.

As grounds therefore, defendant states: (1) the government has failed to provide a sufficient basis to determine whether the proposed testimony meets the requirements of *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993) and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999), and (2) in any event the proposed testimony runs afoul of *Daubert*, *Kumho Tire*, as well as Federal Rules of Evidence 401, 402, 403 and 702.

**FACTS**

At approximately 2:49pm on April 15, 2013, two (2) Improvised Explosive Devices (IEDs) exploded near the finish line of the Boston Marathon within a few

seconds of each other on Boylston Street, Boston, Massachusetts. The first IED was detonated near the Marathon Sports store located at 671 Boylston Street (BMB 1), and the second exploded near the Forum Restaurant located at 755 Boylston Street (BMB 2). In the days after the bombings, FBI evidence technicians processed the scenes, recovering hundreds of pieces of physical evidence. Amongst the physical evidence collected were fragmented remains of printed circuit boards. One of the fragmented circuit boards recovered from the vicinity of BMB 1 was determined by FBI analysts to be consistent with a “FlySky” brand receiver, commonly used in radio control hobby cars. The receiver was forwarded to the FBI laboratory for analysis by, among other units, the Operational Technology Division Digital Forensics Section.

In the early morning hours of April 19, 2013, Dzhokhar Tsarnaev (“Dzhokhar”) and his brother Tamerlan Tsarnaev (“Tamerlan”) were stopped by police near the intersection of Laurel Street and Dexter Avenue and confronted. Tamerlan fired on officers repeatedly and three improvised explosive devices were detonated. Tamerlan was injured and subdued; he died shortly thereafter. Dzhokhar was captured some 15 hours later after he was found hiding in a boat in Watertown. State and federal evidence technicians processed the Laurel/Dexter scene. Recovered from the Laurel/Dexter area<sup>1</sup>

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<sup>1</sup> Discovery provided to date has not made clear precisely where and in what manner the transmitter was recovered from the Laurel/Dexter scene. The defendant has requested this information on November 7, 2014 and again on November 28, 2014. The government on December 4, 2014 claims that it has “already produced all documents and other tangible items relating to the investigation at Dexter and Laurel that are in our possession, custody or control, and that we intend to use at trial or that are material to the preparation of the defense” but could

was a radio-controlled transmitter that had been modified by removing a plastic grip section and other parts. Like the receiver, the modified transmitter was forwarded to the FBI's Operational Technology Division Digital Forensics Analysis Section in Quantico, Virginia.

This government's September 2, 2014 expert disclosure letter noticed the proposed expert testimony of FBI Electronics Engineer Michael McFarlane, who works in the Operational Technology Division, to testify to his examination of the electrical components purportedly used in the two bombs detonated on Boylston Street. The government proposed to have Mr. McFarlane testify as follows:

Engineer McFarlane will testify to his examination of the electronic components that were recovered on Boylston Street and in other locations, attributed the components to different functions for each exploded IED on Boylston Street, and analyzed the significance of other electronics recovered. Engineer McFarlane will describe the electronic components to the Boylston Street IEDs, their compatibility, and how they function as a system. McFarlane will explain that the Boylston Street IEDs employed Remote control triggering technology, which consisted of a transmitter/receiver pair, a speed controller, and a power source, unique to each device. McFarlane will explain that for each IED, a transmitter was bound to a receiver, which was powered by a battery in the IED, and once a signal was activated, the receiver transmitted [sic] activated an electronic speed controller module, which sent a current as an output. McFarlane will explain radio-control technology as used in hobby cars and various variables to the efficacy and compatibility of the technology and will explain that each of the IEDs were likely exploded at close range by separate transmitters.

Gov't Letter of September 2 at 17. In the portion of the letter germane to this Motion, the government proffered that McFarlane's testimony as to BMB 1 would be:

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not or would not point to any discovery or collection of discovery that responded to the defendant's response. The government's December 4, 2014 letter is attached as Exhibit A.

McFarlane finally determined that the transmitter located at Laurel and Dexter Street in Watertown on April 19, 2013 was FlySky FS-GT3B transmitter. McFarlane determined that the FlySky devices were a transmitter/receiver pair and that they had the same bind code.

*Id.* In response to further discovery requests by the defendant regarding the basis for McFarlane's conclusion that the transmitter and receiver were a pair that had the same bind code, the government revealed that it actually wasn't McFarlane who concluded that the bind codes matched. Rather, the work of ascertaining and matching the binding codes was performed by four or more employees – Mike Harmsen, Eric Kunkel, Luke Wardensky, and Tyler Howell among them - of government contractor Booz Allen Hamilton, which apparently places employees at the Quantico Laboratory in the FBI's "Embedded Engineering Program." Consequently, the expert opinion that the binding codes match and, presumably, the qualifications for the ability to give such an opinion at trial, do not belong to McFarlane at all. Indeed, the government appears to recognize as much: although it has not formally provided notice that the Booz Allen Hamilton employees will be expert witnesses, the government belatedly supplied Harmsen's, Howell's, and Kunkel's curricula vitae.<sup>2</sup>

Despite repeated requests, however, the protocol used to ascertain the codes, the actual testing done to retrieve them, and the identity of the persons who conducted the testing (and would presumably be required to testify about it, *see Melendez-Diaz v.*

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<sup>2</sup> Notwithstanding the fact that McFarlane's signed report, dated April 4, 2014, strongly suggested that he performed and/or participated in the work (should we attach?) of determining that the binding codes matched, it now appears McFarlane did not participate in that testing at all. Consequently, he cannot testify to this opinion at trial. *Melendez-Diaz v. Massachusetts*, 557 U.S. 305, 318-20 (2009).

*Massachusetts*, 557 U.S. 305, 318-20 (2009)) all to this day remain a mystery to the defense. In its October 9, 2014 letter to the government (attached hereto as Exhibit A), the defense requested, in regard to the bind code extraction procedure, all “reports, memoranda, and bench notes regarding the tests performed, a description of the specific procedures used in each step, and the results obtained by each procedure.” When provided with unsigned reports that failed to detail the specific procedures used and results obtained, defense counsel in their November 24, 2014 letter to the government (attached hereto as Exhibit B) requested “(a) the procedures and protocols for extracting the binding codes from the EEPROM of the recovered and exemplar receivers, (b) the procedures and protocols for determining that the codes recovered were binding codes, and (c) Quality Assurance Manuals or studies validating that the procedures and protocols used yield accurate results.”

Yesterday, December 4, 2014, more than five months after the government’s first deadline for Rule 16(a)(1)(G) disclosures and one day before defendant’s *Daubert* motions were due, the government purported to respond to the defendant’s request regarding procedures and protocols supporting the bind code opinion testimony. The government wrote:

The reports, notes and memoranda associated with the recovery of the bind codes for the RCIEDs by the CEAU in Quantico were previously produced. On or before December 15, 2014,<sup>3</sup> we will provide you with some additional

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<sup>3</sup>The government’s reference to December 15 for production of more materials relating to scientific analysis suggests that it views the materials as *Jencks* discovery. They are not. As the defendant’s letters to the government make clear, the requests related directly and specifically to



materials that relate to Mr. McFarlane's analysis that are responsive to your requests of November 26, 2014.

Data was pulled from the various EEPROMs using a commercially available chip reader. An unredacted SOP is included herewith.

December 4, 2014 Letter of AUSA Alope Chakravarty to Tim Watkins, et al. (Exhibit A).

Completely missing was any response to the defendant's requests for the reports, protocols, methodologies, Quality Assurance Manuals, or studies that could support reliability of the opinion that the bind codes matched.<sup>4</sup>

The proposed testimony must therefore be excluded because (1) the government has failed to detail its expert testimony under Federal Rule of Criminal Procedure 16(a)(1)(G), and (2) the government appears unwilling to establish that its proposed expert testimony meets the strictures of Federal Rule of Evidence 702 or *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 589 (1993).

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expert matters that fall within Rule 16(a)(1)(G), and should have been provided weeks, if not months, ago.

<sup>4</sup> The disclosure of an unredacted "SOP" (Standard Operating Procedure) referenced in the letter does not respond in any meaningful way to the defendant's request. A copy of the SOP is attached as Exhibit B. For example, the supplied SOP specifies that in a "Non-Standard Examination," documentation of the approach that will be applied is required. It is precisely that documentation that of the bind code extraction procedure that the defendant has sought in vain. Similarly, the tautological statement that "Data was [sic] pulled from the various EEPROMs using a commercially available chip reader" is unresponsive to the request for methodology and validation.

## ARGUMENT

Federal Rule of Criminal Procedure 16(a)(1)(G) requires the government to provide a summary of any expert testimony it intends to use and must describe the witness's opinions, the bases and reasons for those opinions, and the witness's qualifications. As stated in the government's December 4, 2014 letter, the support for the expert opinion that the bind code of the Laurel/Dexter transmitter matches the code extracted from BMB 1 receiver is nothing more than the *ipse dixit* of an as-yet unspecified embedded employee of a government contractor. *General Electric Co. v. Joiner*, 522 U.S. 137, 146 (1997) ("nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence which is connected to existing data only by the *ipse dixit* of the expert"). The defense submits that the government's disclosure fails as it completely omits the information necessary to challenge the opinion.

This lack of detail in the government's disclosure runs afoul of Federal Rule of Evidence 702 and the Supreme Court's pronouncements in *Daubert* and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999). Federal Rule of Evidence 702 provides that an expert "may testify in the form of an opinion or otherwise" if: (1) the expert's knowledge will aid the trier of fact; (2) if the testimony is based on sufficient facts or data; (3) if the testimony is the product of reliable principles and methods; and (4) the expert has reliably applied the principles and methods to the facts of the case. The government has not established that the as-yet unspecified expert's testimony meets these requirements. As

noted above, the government has failed to provide the methodology, protocol, and validation for the opinion that the codes match, let alone whether such methodology has been reliably applied to the facts of this case. Without such information, this Court cannot exercise its gatekeeper role in determining that the testimony is reliable pursuant to *Daubert* and Rule 702. It must therefore be excluded. *Daubert*, 509 U.S. at 597; *Kumho Tire*, 526 U.S. at 150.

*Daubert* laid out non-exhaustive general criteria for assessing the reliability and validity of an expert's testimony, including whether the expert's methodology in question can or has been tested, whether it has been subjected to peer review and publication, the methodology's known or potential error rate, and the existence and maintenance of standards controlling its operation, and whether the methodology has attracted widespread acceptance within a relevant scientific community. *Id.* at 593-4. Because the government has refused to detail to any degree the methodology that the as-yet unspecified expert employed when forming his opinion, this Court can make no finding as to whether the methodology is reliable and the testimony must be excluded.

In sum, the government's disclosure regarding the procedure for extracting the bind codes is insufficient. The Court should exclude the testimony and data regarding the purported match of bind codes.

### CONCLUSION

For the forgoing reasons, the Court should exclude the government's proposed expert testimony regarding the purported matching of bind codes at trial.



Respectfully submitted,

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By his attorneys



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**Certificate of Service**

I hereby certify that this document was served on counsel for the government by email and paper copy by interoffice delivery on December 5, 2014.



Timothy Watkins